

CLAIMS

What is claimed is:

1. A Web page document which results in a client-side computer displaying a Web page corresponding to the Web page document, the Web page document comprising:
information describing components included on the Web page; and
event-driven code associated with at least some of the components, the event-driven code being executed by the client-side computer which displays the Web page.
2. The Web page document as claimed in claim 1, wherein the components include database-related components designed to display data from a database accessible to a server-side computer, and the event-driven code causing creation of information requests which are sent to the server-side computer, resulting in the client-side computer receiving information corresponding to the information requests and displaying the information in conjunction with the database-related components.
3. The Web page document as claimed in claim 1, wherein a component of the components is associated with report generation code which, when executed by the client-side computer, creates a report document which includes information associated with the Web page.

4. A Web page development apparatus comprising:

a monitor for displaying a Web page for viewing by a developer, wherein the Web page is defined by a Web page document;

a user input means for enabling the developer to input information relating to the development of the Web page; and

a processor means, coupled to the monitor and the user input means, the processor means for initializing and executing a Web page development tool, causing the Web page to be displayed on the monitor, receiving the information from the user input means, and causing modifications to the Web page document based on the information, wherein the modifications include incorporating, into the Web page document, event-driven code associated with one or more Web page components.

5. The Web page development apparatus as claimed in claim 4, further comprising a communication means, coupled to the processor means, wherein the communication means is used to send the Web page document to a server-side computer.

6. The Web page development apparatus as claimed in claim 4, further comprising a data storage means, coupled to the processor means, wherein the data storage means is used to store the Web page document.

7. The Web page development apparatus as claimed in claim 4, further comprising a means for encrypting, coupled to the processor means, wherein the means for encrypting is used to encrypt the Web page document.

8. A server apparatus comprising:

at least one communication means which receives a first message from, and sends a second message to, a client-side computer, wherein the first message includes an information request generated by event-driven code included in a Web page document executed by the client-side computer, and the second message includes stored information accessible to the server apparatus; and

at least one processor means, coupled to the at least one communication means, for processing the information request to identify the stored information, for creating the second message which includes the stored information, and for causing the second message to be sent to the client-side computer so that the client-side computer can display the stored information in response to execution of the event-driven code.

9. A server apparatus as claimed in claim 8, further comprising a data storage means, coupled to the processor means, wherein the data storage means is used to store the stored information.

10. A client apparatus comprising:

a monitor which displays a Web page defined by a Web page document executed by the client apparatus;

a communication means which sends first messages to, and receives second messages from, a server-side computer; and

a processor means, coupled to the monitor and the modem, which executes the Web page document, including execution of event-driven code included within the Web page document.

11. The client apparatus as claimed in claim 10, further comprising an encryption means, coupled to the processor means, for encrypting the first messages.

12. The client apparatus as claimed in claim 10, further comprising a decryption means, coupled to the processor means, for decrypting the second messages.

13. The client apparatus as claimed in claim 10, further comprising a data storage means, coupled to the processor means, for storing information associated with the Web page.

14. A method for developing Web pages comprising the steps of:

creating a page document which defines a Web page;

receiving inputs from a developer, wherein at least some of the inputs indicate that a component should be added to the Web page; and

editing the page document, in response to the inputs, wherein editing the page document includes adding event-driven code to the page document, the event-driven code being code being associated with the component and including code which is executed by a client-side computer.

15. The method as claimed in claim 14, wherein at least some of the inputs indicate that previously-created event-driven code should be edited, the method further comprising the step of editing the previously-created event-driven code to create new code which is added to the page document.

16. The method as claimed in claim 14, wherein at least some of the inputs indicate that a property of the component should have a particular value, the method further comprising the step of modifying the event-driven code to specify the particular value.

17. The method as claimed in claim 14, further comprising the step of sending the page document to a server-side computer.

18. The method as claimed in claim 17, further comprising the step of encrypting the page document prior to performing the step of sending the page document to the server-side computer.

19. The method as claimed in claim 14, wherein at least some of the inputs indicate that the component should be linked with a second component of a second page document, the method further comprising the step of adding linking code to the page document which, when executed, will cause a second Web page associated with the second page document to update automatically when the second Web page is displayed along with the first Web page.

20. A method for providing access to stored information comprising the steps of:

- receiving a request from a client-side computer, wherein the information request was generated in response to execution, by the client-side computer, of event-driven code included within a Web page document;

- processing the request to identify stored information corresponding to the request;

- creating a message which includes the stored information; and

- sending the message to the client-side computer so that the client-side computer can display the stored information in response to execution of the event-driven code.

21. The method as claimed in claim 20, wherein the request is a request for a second Web page document, the step of processing includes the step of identifying the stored information as the second Web page document, and the step of creating the message includes the step of including the second Web page document within the message.

22. The method as claimed in claim 21, further comprising the steps of:

- determining whether a user of the client-side computer has rights to access the second Web page document; and,

- if the user does not have the rights, the method bypassing the steps of creating the message and sending the message.

23. The method as claimed in claim 20, wherein the request is a request for data associated with a database, the step of processing includes the steps of identifying the database and obtaining the data from the database, and the step of creating the message includes the step of including the data within the message.

24. The method as claimed in claim 23, further comprising the steps of:
determining whether a user of the client-side computer has rights to access the data;
and,
if the user does not have the rights, the method bypassing the steps of creating the message and sending the message.

25. A method for interacting with a Web page displayed on a client-side computer, the method comprising the steps of:
displaying a Web page associated with a Web page document, wherein the Web page document includes event-driven code; and
executing the event-driven code included within the Web page document.

26. The method as claimed in claim 25, wherein the step of executing the event-driven code is performed in response to receiving input.

27. The method as claimed in claim 26, wherein the input indicates that a second Web page has been requested, the method further comprising the step of requesting the second Web page from a server-side computer.

28. The method as claimed in claim 27, further comprising the steps of receiving and displaying the second Web page from the server-side computer.

29. The method as claimed in claim 28, wherein the first Web page and the second Web page have a first-page linked component and a second-page linked component which are linked between the first Web page and the second Web page.

30. The method as claimed in claim 29, further comprising the steps of:
receiving additional input which indicates that the user wishes the first Web page to display additional data associated with the first-page linked component;
creating an information request which requests the additional data and which requests linked data associated with the second-page linked component;
sending the information request to the server-side computer;
receiving the additional data and the linked data;
displaying the additional data in conjunction with the first-page linked component;
and
displaying the linked data in conjunction with the second-page linked component.

31. The method as claimed in claim 26, wherein the input indicates that data has been requested, the method further comprising the steps of requesting the data from a server-side computer.

32. The method as claimed in claim 31, further comprising the steps of receiving and displaying the data from the server-side computer, wherein the data is displayed in conjunction with a database-related component on the Web page.

33. The method as claimed in claim 32, further comprising the step of updating state variables stored on the client-side computer, wherein the state variables indicate which records, in a database associated with the data, include data which should be accessed next in the event that the client-side computer receives an additional request for data from the user.

34. The method as claimed in claim 26, wherein the input indicates that the user wishes to store the Web page and associated data on the client-side computer, the method further comprising the step of storing the Web page and the associated data on the client-side computer.

35. The method as claimed in claim 34, further comprising the steps of:
determining whether the Web page and the associated data are allowed to be stored on the client-side computer; and,
if the Web page and the associated data are not allowed to be stored on the client-side computer, bypassing the step of storing the Web page and the associated data.

36. The method as claimed in claim 25, further comprising the steps of:
creating, based on the event-driven code, an information request;
sending the information request to a server-side computer;
receiving, from the server-side computer, a message which includes stored information corresponding to the information request; and
displaying the stored information in response to execution of the event-driven code.

37. A system for Web page development, deployment, download, and execution comprising:

a Web page development computer having a first processor means, a first monitor, a first data storage means, a first user input means, and a first communication means, wherein the first processor means initializes a page development tool with which a human developer, using the first user input means, creates a Web page document by placing a component on a Web page displayed on the first monitor, upon which the page development tool retrieves code corresponding to the component from the first data storage means, gathers database information if the component is a database-related component, creates linking code if the human developer indicates that the database-related component should be linked to a second database-related component on a second Web page, and places the code, database information, and linking code in the Web page document, and when the human developer indicates that the Web page defined by the Web page document should be deployed, the Web page development computer, via the first communication means, sends the Web page document to a server-side computer over a first network;

the server-side computer having at least one communication means, a second processor means, and a second data storage means, wherein the Web page document is received off the first network via the at least one communication means and is stored in the second data storage means, and, when a client-side computer requests the Web page document, the server-side computer retrieves the Web page document from the second data storage means and sends, via the at least one communication means, the Web page document to the client-side computer over a second network which could be the first network, and, when the Web page on the client-side computer requests data from a database, the server-side computer retrieves and sends the data, via the at least one communication means, to the client-side computer; and

the client-side computer having a third processor means, a second monitor, a third data storage means, a second user input means, and a second communication means, wherein the third processor means initializes a browser which requests, via the second communication means, the Web page document from the server-side computer, and, after the second communication means receives the Web page document, the third processor means enables the Web page corresponding to the Web page document to be displayed via the second

monitor, and, if the Web page includes the database-related component, the processor executes the code corresponding to the database-related component, causing the client-side computer to send a data request, via the third communication means, to the server-side computer over the second network, and, after receiving data corresponding to the request, the processor causes the data to be displayed within the database-related component on the Web page and stores state variables, for use if additional data is requested, which indicate which data has been displayed, and, if the database-related component is linked to the second database-related component, the third processor executes the linking code, and, if the human user requests that the Web page document be stored locally on the client-side computer, the third processor causes the Web page document, the data and the additional data, and the state variables to be stored in the third data storage means so that the human user can modify the data and the additional data offline, reconnect to the server-side computer at a later time, and download modified data to the server-side computer which would then modify the database using the modified data.